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Nebraska Biotechnology Varieties Chemical Usage

Issued May 2003, by the Nebraska Agricultural Statistics Service, USDA . For more information contact us at: 100 Centennial Mall North, Suite 298, Lincoln, NE 68508, 402-437-5541, e-mail at nass-ne@nass.usda.gov, Internet at http://www.usda.gov/nass/.

Biotechnology Varieties

The National Agricultural Statistics Service conducts the March Agricultural Survey in all States each year. Randomly selected farmers across the United States are asked what they intend to plant during the upcoming growing season. Questions include whether or not farmers intend to plant corn or soybeans that, through biotechnology, is resistant to herbicides, insects, or both.

The States published individually in the following tables represent 81 percent of all corn planted acres and 89 percent of all soybean planted acres. Conventionally bred herbicide resistant varieties were excluded. Insect resistant varieties include only those containing *bacillus thuringiensis* (Bt). Stacked gene varieties include those containing biotech traits for both herbicide and insect resistance.

Corn for Grain: Biotechnology Varieties by State and United States, Percent of All Corn Planted, 2002-2003

State	Insect Resistant (Bt)		Herbicide Resistant		Stacked Gene Varieties		All Biotech Varieties	
	2002	2003	2002	2003	2002	2003	2002	2003
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Illinois	18	24	3	4	1	1	22	29
Indiana	7	7	6	5	*	1	13	13
Iowa	31	38	7	5	3	4	41	47
Kansas	25	25	15	17	2	2	43	44
Michigan	12	13	8	9	2	1	22	23
Minnesota	29	35	11	10	4	6	44	51
Missouri	27	29	6	8	2	3	34	40
Nebraska	34	40	9	11	4	4	46	55
Ohio	6	7	3	3	*	*	9	10
South Dakota	33	35	23	23	10	14	66	72
Wisconsin	15	21	9	9	2	2	26	32
Other States [1]	14	16	12	13	2	2	27	31
US	22	26	9	9	2	3	34	38

* Data rounds to less than 0.5 percent. [1] Other States includes all other States in the Corn estimating program.
Source: USDA NASS Prospective Plantings, March 31, 2003

Soybeans: Biotechnology Varieties by State and United States, Percent of All Soybeans Planted, 2002-2003

State	Herbicide Resistant Only		All Biotech Varieties	
	2002	2003	2002	2003
	Percent	*Percent*	*Percent*	*Percent*
Arkansas	68	79	68	79
Illinois	71	78	71	78
Indiana	83	91	83	91
Iowa	75	82	75	82
Kansas	83	84	83	84
Michigan	72	73	72	73
Minnesota	71	75	71	75
Mississippi	80	81	80	81
Missouri	72	80	72	80
Nebraska	85	87	85	87
North Dakota	61	70	61	70
Ohio	73	74	73	74
South Dakota	89	90	89	90
Wisconsin	78	79	78	79
Other States [1]	70	75	70	75
US	75	80	75	80

[1] Other States includes all other States in the Soybean estimating program.
Source: USDA NASS Prospective Plantings, March 31, 2003

2002 Agricultural Chemical Usage

The agricultural chemical use estimates in this report refer to on-farm use of commercial fertilizers and pesticides on targeted crops for the 2002 crop year. Farm and ranch operators were enumerated late in the growing season or after the farm operator had indicated that planned applications were completed. The data were compiled from the Agricultural Resources Management Study (ARMS) and the Objective Yield Survey, conducted by USDA's National Agricultural Statistics Service.

Corn

Nitrogen was applied to 96 percent of the 2002 corn acreage in 7 selected States. Corn growers used an average of 1.7 applications per acre while applying 83 pounds of nitrogen per treatment. In the selected States, 79 percent of the planted corn acreage received phosphates, while potash was applied to 68 percent of the planted acreage.

Herbicides were applied to 89 percent of the corn acreage in 2002. Atrazine continued to be the most widely applied herbicide with 62 percent of the planted acreage being treated. It was applied at the rate of 1.04 pounds per acre.

In 2002, 24 percent of the corn acreage was treated with insecticides. Tefluthrin was the most widely applied insecticide, with 6 percent of the planted corn acreage treated in the 7 selected States.

In Nebraska, nitrogen was applied to 97 percent of the acreage, phosphates to 70 percent and potash to 21 percent. Herbicides were applied to 83 percent of the corn acreage while insecticide application covered 38 percent. There were a total of 230 usable reports.

Corn: Acreage, Fertilizer and Pesticide Applications, Selected States, 2002

State	Planted Acreage	Nitrogen			Phosphate			Potash			Herbicide	Insecticide
		Area Applied	Appli-cations	Rate Per Application	Area Applied	Appli-cations	Rate Per Application	Area Applied	Appli-cations	Rate Per Application	Area Applied	Area Applied
	1,000 Acres	*Percent*	*Number*	*Pounds/acre*	*Percent*	*Number*	*Pounds/acre*	*Percent*	*Number*	*Pounds/acre*	*Percent*	*Percent*
Iowa	12,300	94	1.3	88	72	1.0	56	69	1.0	70	91	12
Nebraska	8,400	97	1.8	79	70	1.1	33	21	1.1	16	83	38
Total [1]	51,350	96	1.7	83	79	1.1	54	68	1.1	80	89	24

[1] States included: IL, IN, IA, MN, NE, OH, PA, WI.

Corn: Agricultural Chemical Applications, Nebraska, 2001-2002 [1]

Agricultural Chemical	Area Applied		Applications		Rate per Application		Rate per Crop Year		Total Applied	
	2001	2002	2001	2002	2001	2002	2001	2002	2001	2002
Herbicides:	*Percent*	*Percent*	*Number*	*Number*	*Pounds/acre*	*Pounds/acre*	*Pounds/acre*	*Pounds/acre*	*1,000 Lbs.*	*1,000 Lbs.*
2,4-D	6	4	1.0	1.0	0.34	0.51	0.34	0.51	177	150
Acetamide	3	4	1.0	1.0	0.30	0.31	0.30	0.31	68	102
Acetochlor	29	23	1.0	1.0	1.18	1.54	1.18	1.57	2,815	2,985
Alachlor	5	2	1.0	1.0	2.20	1.95	2.20	1.95	832	408
Atrazine	86	64	1.0	1.0	0.89	0.91	0.92	0.99	6,424	5,356
Bromoxynil	1		1.0		0.39		0.39		36	
Carfentrazone-ethyl		4		1.0		0.01		0.01		5
Clopyralid	2	9	1.0	1.0	0.08	0.09	0.08	0.09	14	63
Dicamba	9	5	1.0	1.0	0.12	0.32	0.12	0.32	83	129
Dicamba, Dimet. salt	2	3	1.0	1.0	0.11	0.11	0.11	0.11	19	29
Dicamba, Pot. salt		2		1.0		0.39		0.39		71
Diflufenzopyr-sodium	3	3	1.0	1.0	0.04	0.05	0.04	0.05	9	12
Dimethenamid	9	6	1.0	1.0	0.81	0.76	0.81	0.76	605	362
Flumetsulam	2	9	1.0	1.0	0.04	0.03	0.04	0.03	8	23
Glyphosate	15	8	1.1	1.0	0.76	0.67	0.85	0.73	1,056	503
Imazethapyr	4		1.0		0.02		0.02		6	
Isoxaflutole	13	11	1.0	1.0	0.04	0.05	0.04	0.05	45	46
Mesotrione		7		1.0		0.08		0.08		49
Metolachlor	5	9	1.0	1.0	1.31	1.16	1.31	1.22	554	935
Nicosulfuron	8	8	1.0	1.0	0.02	0.02	0.02	0.02	13	14
Primisulfuron	4	7	1.0	1.0	0.02	0.02	0.02	0.02	7	13
Prosulfuron	3	7	1.0	1.0	0.01	0.01	0.01	0.01	3	6
Rimsulfuron	6	8	1.0	1.0	0.01	0.01	0.01	0.01	5	8
S-Metolachlor	24	20	1.0	1.0	0.89	0.88	0.89	0.88	1,756	1,466
Insecticides:										
Bifenthrin		3		1.0		0.05		0.05		14
Chlorpyrifos	3	4	1.0	1.1	0.88	0.74	0.88	0.82	214	307
Cyfluthrin	10	6	1.0	1.0	0.007	0.005	0.007	0.005	5	3
Dimethoate		4		1.0		0.42		0.42		125
Fipronil	15	7	1.0	1.0	0.11	0.09	0.11	0.09	136	53
Permethrin	2	3	1.0	1.1	0.07	0.10	0.07	0.11	14	25
Tebupirimphos	10	6	1.0	1.0	0.14	0.11	0.14	0.11	108	52
Tefluthrin	8	9	1.0	1.0	0.10	0.10	0.10	0.10	68	76
Terbufos	6	3	1.0	1.0	0.99	1.01	0.99	1.01	442	223

[1] Missing data not published.

Soybeans

Soybean producers in 20 selected states applied nitrogen to 20 percent of the planted acreage, phosphates to 26 percent and potash to 29 percent. Herbicides were applied to 99 percent of the soybean acreage.

In Nebraska, nitrogen was applied to 31 percent of the soybean acreage, phosphates to 36 percent, and potash to 11 percent. Herbicides were applied to 100 percent of the soybean acreage. There were a total of 125 usable reports.

Soybeans: Acreage, Fertilizer and Pesticide Applications, Selected States, 2002

State	Planted Acreage	Nitrogen			Phosphate			Potash			Herbicide
		Area Applied	Appli-cations	Rate Per Application	Area Applied	Appli-cations	Rate Per Application	Area Applied	Appli-cations	Rate Per Application	Area Applied
	1,000 Acres	*Percent*	*Number*	*Pounds/acre*	*Percent*	*Number*	*Pounds/acre*	*Percent*	*Number*	*Pounds/acre*	*Percent*
Kansas	2,750	24	1.0	17	25	1.0	43	8	1.0	26	98
Iowa	10,400	3	1.0	26	7	1.0	70	12	1.0	120	99
Missouri	5,050	13	1.0	18	29	1.0	44	36	1.0	87	99
Nebraska	4,700	31	1.0	15	36	1.0	45	11	1.0	28	100
South Dakota	4,250	37	1.1	18	41	1.0	54	15	1.4	27	100
Total [1]	71,670	20	1.1	19	26	1.0	48	29	1.0	87	99

[1] States included: AR, IL, IN, IA, KS, KY, LA, MD, MI, MN, MS, MO, NE, NC, ND, OH, SD, TN, VA, WI.

Soybeans: Agricultural Chemical Applications, Nebraska, 2001-2002 [1]

Agricultural Chemical	Area Applied		Applications		Rate per Application		Rate per Year		Total Applied	
	2001	2002	2001	2002	2001	2002	2001	2002	2001	2002
Herbicides:	*Percent*	*Percent*	*Number*	*Number*	*Pounds/acre*	*Pounds/acre*	*Pounds/acre*	*Pounds/acre*	*1,000 Lbs.*	*1,000 Lbs.*
Alachlor		3		1.0		1.17		1.17		192
Chlorimuron-ethyl		6		1.0		0.02		0.02		6
Cloransulam-methyl	9		1.0		0.02		0.02		10	
Fomeafen	6		1.0		0.20		0.20		62	
Glyphosate	72	78	1.2	1.3	0.72	0.73	0.87	1.00	3,101	3,661
Glyphosate diam salt		13		1.5		0.67		1.04		631
Imazethapyr	13	14	1.0	1.0	0.05	0.05	0.06	0.05	37	35
Metribuzin		3		1.0		0.26		0.26		33
Pendimethalin	13	17	1.0	1.0	0.80	0.85	0.80	0.86	502	671
S-Metolachlor		4		1.0		0.77		0.77		162
Sulfentrazone	6		1.0		0.16		0.16		47	
Sulfosate	6		1.6		1.26		2.10		624	
Trifluralin	8	5	1.0	1.0	0.85	0.72	0.85	0.72	335	166
Insecticides										
Chlorpyrifos		*		1.1		0.52		0.59		26

[1] Missing data not published. * Area applied is less than one percent.

Winter Wheat

Winter wheat producers in 10 selected states applied nitrogen to 86 percent of the planted acreage, phosphates to 55 percent and potash to 15 percent. Herbicides were applied to 38 percent of the winter wheat acreage.

In Nebraska, nitrogen was applied to 79 percent of the winter wheat acreage, phosphates to 45 percent, and potash to 4 percent. Herbicides were applied to 49 percent of the winter wheat acreage. There were a total of 89 usable reports.

Winter Wheat: Acreage, Fertilizer and Pesticide Applications, Selected States, 2002

State	Planted Acreage	Nitrogen			Phosphate			Potash			Herbicide
		Area Applied	Appli-cations	Rate Per Application	Area Applied	Appli-cations	Rate Per Application	Area Applied	Appli-cations	Rate Per Application	Area Applied
	1,000 Acres	*Percent*	*Number*	*Pounds/acre*	*Percent*	*Number*	*Pounds/acre*	*Percent*	*Number*	*Pounds/acre*	*Percent*
Colorado	1,650	64	1.2	44	31	1.0	35				12
Kansas	8,100	91	1.4	45	64	1.0	31	8	1.0	36	32
Missouri	760	97	1.6	53	75	1.0	55	74	1.0	73	12
Nebraska	1,520	79	1.4	34	45	1.0	33	4	1.0	31	49
Total [1]	22,190	86	1.5	45	55	1.0	36	15	1.0	53	38

[1] States included: CO, IL, KS, MO, MT, NE, OH, OK, TX, WA.

Winter Wheat: Agricultural Chemical Applications, Nebraska, 2002

Agricultural Chemical	Area Applied	Applications	Rate per Application	Rate per Year	Total Applied
	2002	2002	2002	2002	2002
Herbicides:	*Percent*	*Number*	*Pounds/acre*	*Pounds/acre*	*1,000 Pounds*
2,4-D	31	1.0	0.31	0.31	142
Dicamba	7	1.0	0.06	0.06	6
Metsulfuron-methyl	13	1.0	0.004	0.004	1
Triasulfuron	14	1.0	0.02	0.02	3

Pesticides: Common Names and Trade Names

Herbicides

Common Name	Trade Name	Common Name	Trade Name
2,4-D	Several	Glyphosate	Accord, Backdraft, Buccaneer, Clear-Out, Gly Star, Cornerstone, Extreme, Fallow Master, Field Master, Glyfos, Glyphomax, Honcho, Landmaster, Miarage, RT Master, Rattler, Ready Master, Roundup
Acetamide	Axiom, Define, Domain, Epi		
Acetochlor	Degree Xtra, DoublePlay, Field Master, Fultime, Harness, Surpass, TopNotch		
Alachlor	Bronco, Bullet, Lariat, Lasso, Micro-Tech, Partner		
Atrazine	Aatre, Banvil-K + Atrazine, Basis Gold, Bicep, Buctril + Atrazine, Bullet, Degree, Extrazine, Field Master, Fultime, Guardsman, Harness, Laddok, Lariat, LeadOff, Liberty, Marksman, Moxy + Atrazine, Ready Master, Shotgun, Simazat, Surpass	Glyphosate diam. salt	Touchdown
		Imazethapyr	Extreme, Lightning, Pursuit, Steel
		Isoxaflutole	Balance, Epi
		Mesotrione	Callisto
		Metolachlor	Bicep, Broadstrike + Dual, Dual, Turbo
		Metribuzin	Axiom, Boundary, Canopy, Domain Lexone, Sencor, Turbo
Bromoxynil	Bromox/MCPA, Bronate, Buctril, Moxy + Atrazine	Metsulfuron-methyl	Ally, Canvas, Finesse
		Nicosulfuron	Accent, Basis, Celebrity, DPX-79406, Steadfast
Carfentrazone-ethyl	AIM		
Chlorimuron-ethyl	Authority, Canopy, Classic, Synchrony	Pendimethalin	Prowl, Pursuit, Squadron, Steel
		Primisulfuron	Beacon, Exceed, NorthStar, Spirit
Clopyralid	Accent, Curtail, Hornet	Prosulfuron	Exceed, Peak, Spirit
Cloransulam-methyl	Amplify, FirstRate, Frontrow, Gauntlet	Rimsulfuron	Accent, Basis, DPX-79406, Steadfast
Dicamba	Banvel, Celebrity, Clarity, Fallow Master, NorthStar	S-Metolachlor	Bicep, Boundary, Dual
		Sulfentrazone	Authority, Canopy, Command, Gauntlet, Spartan
Dicamba, Dimethlamine salt	Distinct, Range Star, Sterlin		
Dicamba, Pot. Salt	Banvel-K + Atrazine, Marksman	Sulfosate	Touchdown
Diflufenzopyr-sodium	Celebrity, Distinct	Triasulfuron	Amber, Rave
Dimethenamid	Detail, Frontier, Guardsman, Leadoff	Trifluralin	Broadstrike + Treflan, Buckle, Treflan, Tri-4
Flumetsulam	Accent Gold, Bicep, Broadstrike + Dual, Broadstrike + Treflan, Frontrow, Hornet, Python		

Insecticides

Common Name	Trade Name	Common Name	Trade Name
Bifenthrin	Capture	Permethrin	Ambush, Pounce
Chlorpyrifos	Chlorpyrifos, Lorsban	Tebupirimphos	Aztec
Cyfluthrin	Aztec	Tefluthrin	Force
Dimethoate	Cygon, Digon	Terbufos	Counter
Fipronil	Regent		

Agricultural chemical use and pest management practices data contained in this publication are a summary of data published in USDA NASS *Agricultural Chemical Usage - Field Crops* found on the internet at http://www.usda.gov/nass/ dated May 14, 2003.

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